

CLAIMS

We claim:

- 5 1. An apparatus for producing at least one mosaic tile sheet, comprising:
 - i) a grid comprising a plurality of slots suitable for ordering a plurality of tiles;
 - ii) a screen comprising a plurality of holes corresponding to said plurality of slots of said grid; and
 - 10 iii) a tank comprising an open end and an outlet, wherein when said apparatus is assembled, said screen and said grid cover said open end of said tank.
- 15 2. The apparatus of Claim 1, further comprising a vacuum pump connected to said outlet of said tank with tubing, wherein said vacuum pump is suitable for applying negative pressure to said open end of said tank.
- 20 3. The apparatus of Claim 2, further comprising a means to plug said holes of said screen that are not covered by said slots of said grid.
- 25 4. The apparatus of Claim 2, wherein said vacuum pump is rotary vane vacuum pump.
5. The apparatus of Claim 2, wherein said negative pressure is continuous and invariable.
6. The apparatus of Claim 1, wherein at least one of said plurality of slots are in a shape selected from the group consisting of a square, a rectangle, a rhombus, a trapezoid, a triangle, a pentagon, a hexagon, an octagon, a circle, an oval, a crescent, and a star.
- 30 7. The apparatus of Claim 1, wherein one or both of said grid and said screen further comprise a means for aligning said screen to said tank and/or said grid to said screen.

8. The apparatus of Claim 1, wherein said grid is permanently attached to said screen.

9. The apparatus of Claim 1, wherein said screen is permanently attached to said tank.

10. A method for producing at least one mosaic tile sheet, comprising:

- a) providing:
 - i) a plurality of mosaic tiles, wherein said tiles comprise front surfaces and back surfaces,
 - ii) an adhesive,
 - iii) a rigid backing comprising a front side and a back side, and
 - iv) the apparatus of Claim 2;
- b) placing said plurality of mosaic tiles in said plurality of slots of said grid to produce a grid-mosaic tile assembly;
- c) placing said grid-mosaic tile assembly over said screen, wherein one side of said screen covers said open end of said tank, and wherein the opposite side of said screen comes in contact with said front surfaces of said mosaic tiles of said grid-mosaic tile assembly;
- d) applying negative pressure to said front surfaces of said mosaic tiles through said holes of said screen with said vacuum pump; and
- e) applying said adhesive to a front side of said backing or to said back surfaces of said mosaic tiles, and placing said backing on said grid-mosaic tile assembly such that said back surfaces of said mosaic tiles and said front side of said backing come in contact with said adhesive to produce at least one mosaic tile sheet.

11. The method of Claim 10, further comprising step f) applying downward pressure to said backing in order to uniformly distribute said adhesive on and around said mosaic tiles of said grid-mosaic tile assembly.

12. The method of Claim 11, wherein said applying downward pressure does not cause said adhesive to contact said grid.

13. The method of Claim 11, further comprising step g) removing said negative
5 pressure after said adhesive has set.

14. The method of Claim 13, further comprising step h) removing said mosaic tile sheet from said apparatus after said negative pressure has been neutralized.

10 15. The method of Claim 10, wherein a design template is provided for guiding the placing of said plurality of mosaic tiles of step b.

16. The method of Claim 14, further comprising step i) beveling at least one side of
said mosaic tile sheet.

15 17. A mosaic tile sheet produced by the method of Claim 10, comprising a rigid backing, an adhesive and a plurality of tiles, wherein said front surfaces of said mosaic tiles are substantially level.

20 18. The mosaic tile sheet of Claim 17, wherein said rigid backing is made of a material selected from the group consisting of ceramic, stone, glass, cultured stone, porcelain, cement, fiber board, resin board, solid plastic, composite material board, wood, and metal.

25 19. The mosaic tile sheet of Claim 17, wherein said adhesive is selected from the group consisting of a resin, cement, thinset, glue, plaster, urethane, acrylic, and hot melt.

20. The mosaic tile sheet of Claim 17, wherein said plurality of mosaic tiles comprise at least one of the group consisting of a ceramic tile, a glass tile, a stone tile, a cultured stone tile, a porcelain tile, a cement tile, a resin tile, a wood tile, and a plastic tile.

21. The mosaic tile sheet of Claim 17, wherein at least one side of said sheet is beveled.

22. A mosaic tile sheet produced by the method of Claim 10, comprising a rigid
5 backing, an adhesive and a plurality of tiles, wherein said rigid backing is curved, and said front surfaces of said mosaic tiles are substantially at the same height.

23. The mosaic tile sheet of Claim 22, wherein said height is measured from the front surface of said backing to the front surfaces of said mosaic tiles.

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24. A mosaic tile sheet comprising a rigid backing, an adhesive and a plurality of mosaic tiles, wherein said front surfaces of said mosaic tiles are substantially even.

15 25. The mosaic tile sheet of Claim 24, wherein said mosaic tiles are substantially even when adjacent mosaic tiles differ in height by less than 2 mm.